WHAT IS CLAIMED IS:

1   1.   An   interference   cancellation   (IC) method

2   comprising the steps of:

3   receiving signals from at least two users, said

4   received signals forming respective signal data streams;

5   and

6   performing an interference cancellation (IC) process

7   on a given portion of each of said signal data streams,

8   each said given portion being within a common window,

9   whereby respective interference between each of said

10   respective data streams is minimized.

1   2.   The   method   according   to   claim 1, further

2   comprising, upon completion of said performing step, the

3   step of shifting said common window to another portion of

4   said signal data streams.

1   3.   The method according to claim 2, wherein said

2   common window has a given window size, said method

3   further comprising the step of modifying, after said step

4   of shifting, said given window size.

1   4.   The method according to claim 2, wherein said

2   step of shifting further comprises the step of:

3   shifting said common window by a full window length.

1   5.   The method according to claim 2, wherein said

2   step of shifting further comprises the step of:

3   shifting said common window by a fractional window

4   length.

1   6.   The method according to claim 1, wherein said

2   step of performing is repeated a plurality of times on

3   said given portion of said respective signal data

4   streams, within said common window.

1   7.   The method according to claim 1, wherein said

2   common window has a constant window size.

1   8.   The method according to claim 1, wherein said

2   respective signal data streams comprise symbols therein.

1   9. The method according to claim 1, further

2   comprising the step of:

3   determining, at the end of said common window, at

4   least one symbol within at least one of said respective

5   signal data streams, said at least one symbol extending

6   outside said common window, wherein, in said step of

7   performing, said IC process processes said at least one

8   symbol.

1   10. An interference cancellation apparatus in a

2   telecommunication system, said apparatus comprising:

3   receiving means for receiving signals from at least

4   two users, said received signals forming respective

5   signal data streams; and

6   performing means for performing an interference

7   cancellation (IC) process on a given portion of each of

8   said signal data streams, each said given portion being

9   within a common window, whereby respective interference

10   between each of said respective signal data streams is

11   minimized.

1   11.   The apparatus according to claim 10, further

2   comprising shifting means for shifting, upon completion

3   of said performing means, said common window to another

4   portion of said signal data streams.

1   12.   The apparatus according to claim 11, wherein

2   said shifting means shifts said common window by a full

3   window length.

1   13.   The apparatus according to claim 11, wherein

2   said shifting means shifts said common window by a

3   fractional window length.

1   14.   The apparatus according to claim 10, wherein

2   said performing means further comprises repeating means

3   for repeating said IC process a plurality of times on

4   said given portion of said respective signal data

5   streams, within said common window.

1   15. The apparatus according to claim 10, wherein

2   said common window has a given window size, said

3   apparatus further comprising modifying means for

4   modifying said given window size.

1   16. The apparatus according to claim 10, wherein

2   said respective signal data streams comprise symbols

3   therein.

1   17. The apparatus according to claim 10, further

2   comprising:

3   determining means for determining, at the end of

4   said common window, at least one symbol within at least

5   one signal data stream, said at least one symbol

6   extending outside said common window, wherein said

7   performing means performs said IC process on said at

8   least one symbol.

1   18. A wireless telecommunications system comprising:

2   a receiver for receiving signals from at least two

3 users, said received signals forming respective signal

4 data streams; and

5   a processing unit for performing an Interference

6 Cancellation (IC) process on a given portion of each of

7 said signal data streams, each said given portion being

8 within a common window, whereby respective interference

9 between each of said respective signal data streams is

10 minimized.

1   19. The system according to claim 18, further

2 comprising a memory unit connected to said receiver for

3 storing said respective signal data streams thereon, said

4 memory unit being coupled to said processing unit.

1   20. The system according to claim 19, wherein said

2 memory unit comprises a buffer memory, said processing

3 unit performs said IC process on said respective signal

4 data streams in said buffer memory.

1   21. The system according to claim 18, wherein said

2   processing unit further comprises a repeater for

3   repeating said IC process a plurality of times on the

4   respective given portions of said respective signal data

5   streams within said common window.

1   22. The system according to claim 18, wherein said

2   processing unit further comprises a shifter for shifting

3   said common window to another portion of said respective

4   signal data streams.

1   23. The system according to claim 18, further

2   comprising a determiner for determining, at the end of

3   said common window, at least one symbol within said

4   signal data streams, said at least one symbol extending

5   outside said common window, wherein said performing means

6   performs said IC process on said at least one symbol.

1   24. A memory storage device for storing a data

2   structure therein, said memory storage device comprising:

3   (a) receiving means for receiving data;

4   (b) performing means for performing an interference

5   cancellation (IC) process on a portion of said received

6   data, said IC process processing said portion within a

7   window; and

8   (c) shifting means for shifting said window.

1   25. The memory storage device according to claim

2   24, wherein said performing means repeats said IC process

3   on said portion of said received data within said window

4   a plurality of times.

1   26. The memory storage device according to claim

2   24, wherein said shifting means shifts said window by a

3   full window length,

1   27. The memory storage device according to claim

2   24, wherein said shifting means shifts said window by a

3   partial window length.

1   28. The memory storage device according to claim 24,

2   wherein said received data comprise symbols therein.

1   29. The memory storage device according to claim

2   24, further comprising:

3   determining means for determining, at the end of

4   said window, at least one symbol within said received

5   data, said at least one symbol extending outside said

6   window, wherein said performing means performs said IC

7   process on said at least one symbol.